Inside & Out

An interview with Greg Petsch
Manufacturing and Materials zooms past output goals

(This is the sixth in a series of interviews with senior managers discussing business strategies and new organization. If you have any comments, suggestions or questions, please send them to the Inside & Out Suggestion Box on the Banyan network under "suggestion" in Bmail or to mailcode 040516.)

Greg Petsch, 42, is Senior Vice President, Worldwide Manufacturing and Materials. His organization includes 6,020 full-time and contract employees in Houston, Singapore and Scotland. He oversees all worldwide manufacturing of the company's desktop and portable PCs and systems, including options, service repair operations and printed circuit board assembly.

Petsch joined Compaq in September 1983 as director of manufacturing control. He was named Vice President, CPU Manufacturing, in May 1989 and Vice President, Manufacturing, in November 1991. He was named to his present post in August 1992.

Petsch has been instrumental in implementing various quality control procedures and programs in Compaq manufacturing, which rank among the highest in customer satisfaction in PC industry polls.

Prior to joining Compaq, Petsch was employed at Texas Instruments for more than nine years in various manufacturing positions. He holds a Bachelor of Science in Business Technology from the University of Houston and is a member of the American Production and Inventory
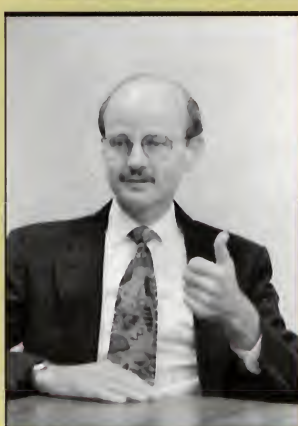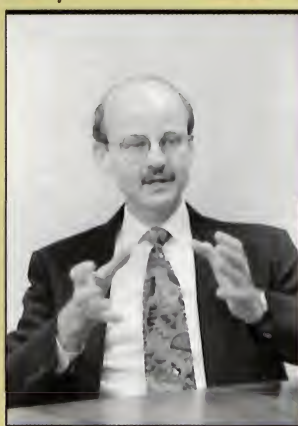

Control Society.

Petsch has been married for 21 years and has two daughters and a granddaughter. He is active in his church, teaching Sunday school classes and Bible study. He says he used to enjoy bowling and golf as hobbies but hasn't had time to play much in the past year. He's hoping he'll have a chance to take up both sports again in 1993.

Q. So much has been accomplished in the past year, it's difficult to know where to begin. For context, let's start with manufacturing sites. How many does Compaq have and what does each of them make?

A. Compaq has three primary manufacturing locations. Most desktop and systems products for Europe are produced at Erskine, Scotland, just outside of Glasgow. A second Scottish facility in nearby Stirling will be closed in March as an efficiency move and its operations were consolidated into Erskine. Passive matrix notebooks for the worldwide market are produced in Singapore, as are 60 percent of our circuit boards. We have also recently begun some regional desktop production there. Printed circuit boards for North America are produced in Houston, where desktops and systems for North America are produced.

In addition to these primary sites, Compaq utilizes Citizen Corporation in Japan as a fourth production source. Citizen makes our active matrix

notebooks under a supplier agreement, and is recognized as a strategic partner.

Q. What is the role of the Manufacturing and Materials organization in Compaq's overall strategy?

A. Our role, first and foremost, is to ensure that the company's leadership strategy with regard to quality, cost-effectiveness, price-competitiveness, value and reliability is built into every COMPAQ product that leaves our manufacturing facilities. Because Compaq is committed to be the industry leader in these areas, the challenge to the Manufacturing and Materials organization is clear: be the best in the business by delivering what the customer wants, when he needs it, at a competitive price..

Q. 1992 has been a particularly challenging year for the company. How has the Manufacturing and Materials organization performed through it all?

A. In one word, "incredibly!" We virtually doubled our volume from 1991 to 1992. In fact, we produced over 200,000 units in September alone. That's as much product in one month as we produced in the first quarter of 1992.

What makes this achievement all the more remarkable is the fact that we did it with fewer people than we had in 1991, and with two fewer manufacturing buildings in Houston. CCM1 and CCM2,

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Compaq announces notebooks, portable PCs

Marking the 10-year anniversary of the announcement of the company's first product, Compaq unveiled a product blitz Nov. 9 that includes several aggressively priced notebook and portable PCs.

Included in the announcement was the COMPAQ LTE Lite 4/25C, the world's first active matrix color notebook based on the new Intel 486SL microprocessor; the COMPAQ LTE Lite/25E, the first notebook to feature a bright, active matrix black and white VGA display; and 66-MHz 486DX2 models of the COMPAQ PORTABLE 486, now the world's fastest portable PC.

"Since the introduction of the first COMPAQ Portable a decade ago, our engineering, technology and manufacturing strengths have enabled us to grow from a mere start-up portable PC manufacturer to a Fortune 200 computer powerhouse," says Eckhard Pfeiffer, CEO. He adds that since January, we have brought to market over 100 new products.

Amazing color

The COMPAQ LTE Lite 4/25C features Intel's 25-MHz 486SL microprocessor and includes an integrated numeric co-processor and 8-kilobyte cache. The small, lightweight notebook PC provides performance similar to 486DX systems, and is up to 100 percent faster than 386SL-based products.

All models come standard with a brilliant active matrix color VGA display, an integrated EasyPoint trackball, 4 megabytes of RAM, battery life of two to three hours on a single charge, desktop expansion capability and extensive security features.

Best black and white

Our customers asked for it and we delivered. The COMPAQ LTE Lite/25E has an exclusive active matrix black and white VGA display (640 X 480) that is up to three times brighter than other competitive passive matrix-basic mono-

chrome notebook PCs.

The new addition to the Lite family features the COMPAQ UltraView display (9.5-inch diagonally), which represents a new generation in display technology. With its integrated EasyPoint trackball, high performance and screen clarity, UltraView is unmatched.

The COMPAQ LTE Lite/25E is both display and processor upgradeable. Customers can upgrade the new active matrix black and white VGA display to an active matrix color panel, and the 386SL microprocessor can be upgraded to Intel 486SL chips.

Lightning-fast portable

The lightning-fast COMPAQ PORTABLE 486 now comes standard with the Intel 66-MHz 486DX2 microprocessor making it the most powerful portable PC in the world. Models of the new portable deliver up to 75 percent greater processing power than 33-MHz 486-based Toshiba T6400DX products.

100,000th unit rolls off VIM lines in record time

Paul Landrew
Manufacturing

Compaq manufacturing employees recently celebrated a milestone that was reached in only a few short – but very busy – months. The 100,000th COMPAQ ProLinea rolled off the Vertically Integrated Manufacturing (VIM) lines in CCM3 in late October.

VIM, proposed last spring, is a means of producing high volumes of computers in a relatively small amount of space. The concept calls for production to begin at one end of the manufacturing line with component parts and end at the other with boxed computers ready for shipment. The production line uses only 7,000 square feet of floor space and now rivals early outputs of entire facilities.

It took 10 weeks to implement the first line, VIM 31. Production on VIM 31 officially began the first week of June – making the line instrumental in delivery of products for the June 15th announcements.

Engineering and operation innovations, including floor layout, run-in time reductions and inventory management, all contributed to the dramatic results of VIM 31. The concept was so successful that VIM 32 was put into operation in August.

The company's manufacturing teams are getting very close to meeting targeted throughput rates on an hourly and daily basis. The VIM lines are a true testament to the potential of Vertically Integrated Manufacturing and to the goal of continuous improvement at Compaq.

Photo by Jeff Wolford

Third shift manufacturing employees gather around the 100,000th COMPAQ ProLinea built on the new VIM lines.

Send us your news

Story idea for *Inside & Out?* Send it to *Inside-Out* Suggestion @ Mkt Corp @ NA Hou on the Banyan network (under Suggestion in directory) or mail code 040516.

Compaq bolsters cellular modems

Compaq introduced the most full-featured, high performance internal modem available from any PC manufacturer Nov. 9. The company extended its leadership in mobile computing by teaming with Motorola and Nokia Mobile Phones, Inc.

Compaq engineers work directly with both companies to bring new products to market that enhance and extend the capabilities for customers who require high levels of communication in COMPAQ notebook and portable products.

The new COMPAQ SpeedPAQ 144 has integrated, highly mobile cellular data and fax connections, and provides the ultimate productivity tool for mobile computing. If offers lightning speed of 14.4 Kbps for landline data transmission and 9600 bps for send/receive fax transmissions.

In an industry first, customers using the COMPAQ SpeedPAQ 144 can take advantage of the Cellular Direct Connection feature, a simple cable interface between the computer and cellular phone, eliminating the need for an inconvenient, cumbersome cellular interface box required by other manufacturers. With this easy-to-use, lightweight cable, cellular customers can easily connect their computers to send data and faxes from virtually anywhere.

The product also features the industry's first high-speed internal modem to ship with the MNP 10 error control protocol to enhance data transmission quality.

The COMPAQ SpeedPAQ 144 is one of several modem options available for the Enhanced Option Slot found on COMPAQ notebook and portable products.

Three-year warranty leads industry

When the company announced its free three-year warranty on every COMPAQ PC sold worldwide, it raised the standard for customer service and support in its industry.

Compaq is the only computer manufacturer to provide a three-year warranty on all current PCs. The announcement was made early this month. The company also announced it has extended its free lifetime technical telephone support to seven days a week, 24 hours a day.

"Because we build the highest quality products, and offer extensive service and support programs through CompaqCare, no other competitor – not IBM, not DEC, not HP, not AST, not Dell – backs all of its products the way we do," says Eckhard Pfeiffer, CEO.

Along with the three-year warranty, Compaq North America now offers several warranty upgrade contracts extending the warranty period and service upgrade contracts extending on-site service for desktops and portables for customers who require additional coverage.

An interview with Greg Petsch

which had housed CPU production, became headquarters for Compaq's North American Service operations in June. These operations had been located in leased facilities in Sommermeyer, about 12 miles away.

Q. The people in your organization must be extremely dedicated to perform so remarkably.

A. Compaq manufacturing employees have never backed away from a challenge. There's a lot of sacrifice going on out there. Some employees are working 29 out of 30 days to meet production goals. We haven't reached the volume peak yet. We're forecasting another 81 percent increase in production next year. My challenge is to achieve this first quarter ramp while implementing new schedules that won't require so many hours of work from our employees.

We have the greatest people in Distribution, Manufacturing and Materials. Our manufacturing sites are working to improve and streamline productivity. As one example, this year in Singapore, our people implemented new cost controls and staffing procedures that resulted in decreasing our cost per unit significantly. Because of this, Singapore became a cost model for all Compaq manufacturing, resulting in Houston and Scotland implementing tremendous unit savings.

Our procedures are working. We have the people and the talent to support the volume of products we will produce in the year to come.

Q. Any other major accomplishments?

A. In response to the overwhelming demand, we moved to full three-shift operations and we completed installation of our Vertically Integrated Manufacturing line. This VIM line combines CPUs and PCAs in a single process, beginning with a raw board and ending with a completed product being packed in a box. In the process of building all this product, consolidating our activities, and streamlining our lines, we were also able to reduce per unit source costs by 52 percent, an accomplishment of which we are particularly proud.

Q. Fifty-two percent is impressive. How did you do it?

A. We developed a product deployment strategy that provides cost information on each product we produce. We also achieved tremendous capacity growth by breaking a paradigm of product burn-in that had been in place since 1983. The new burn-in process yields a more reliable product in less time with less handling. In addition, we made significant improvements in our organizational structure, freight and duty savings, obsolescence controls, and utilizing our manufacturing facilities around the clock.

Q. In addition to the savings in manufacturing costs, how much material cost savings has been realized?

A. Through October, we have realized over $165 million in material savings in 1992. We project this will exceed $200 million by year end. We have set an even more aggressive savings target for 1993 as well as targeting our suppliers to provide a three-year warranty on the parts they deliver to us.

Q. How do these lower material costs translate into product prices?

A. It gives us a tremendous advantage. We've gotten to where we are able to build very fast by using our manufacturing capacity around the clock. In the process, we've had to become a world class materials integrator, able to procure parts from a worldwide resource in a matter of hours before assembling, testing and shipping product. Because of our favorable purchasing position, we can leverage this advantage to achieve the best worldwide pricing of our products.

Q. Does this mean we can be cost-competitive with Far East manufacturers?

A. Absolutely. There's a paradigm in the electronics industry that says that technologies developed in the U.S. can only be made cost-effectively in the Far East.

That's why the U.S. lost all the manufacturing of VCRs, calculators and TVs. I believe that Compaq can break that paradigm. With our cost structures, manufacturing volumes, design innovations, capacity utilization and people, we can achieve worldwide pricing to the point where we can build products here in the U.S. for North America, Scotland for Europe and Singapore for the Far East for less than it costs a Far East manufacturer to import products to these geographies.

Q. Given the dramatic increase in volume, isn't the quality of our products bound to suffer?

A. Not for a moment! Every single unit we ship must meet Compaq's stringent quality and reliability criteria before it leaves our plant, whether it is one of a kind or one of a million. Quality must be considered a given in this market. That's why we have set quality criteria that measures internal and external customer satisfaction.

Q. What are these criteria, and are they the same at every location?

A. We have agreed on eight worldwide measurements that are displayed prominently on plaques that adorn the walls of every plant. The first three deal with quality.

Measurement #1, dealing with field defects, provides for the collection of information on dealers' reactions to what they find when they open a Compaq shipment.

Measurement #2 covers our 20-hour audit program, where we take about 3 percent of our product every day worldwide and subject them to a rigorous series of tests after they have completed the manufacturing process.

Q. What do these tests involve?

A. In addition to standard shock and vibration testing, we power-cycle the new units, run them at worldwide voltages, and configure them with options and operating systems. We treat them just like the most demanding customer might.

Q. Is this approach different from other manufacturers'?

A. Definitely. At Compaq, 100 percent of our units are tested in manufacturing, not sample tested. The 20-hour audit is in addition to the 100 percent test; other manufacturers do mostly random testing. In fact, manufacturing our own products from the ground up really differentiates us from most of our competitors who choose to rely on OEMs. By doing our own assembly and test, we can maintain total control of costs, process efficiency and product quality. This anecdote illustrates this critical difference: a specific part which tested okay at the supply source failed our manufacturing process. Every part in the batch failed, so we put the product on hold and shut down the line until the supplier fixed his process and got us good parts.

Because we set our own high standards and develop our own tests within a tightly linked Design-to-Manufacturing process, we were able to catch the problem and fix it before it got built into the product and shipped to the customer. Our competitors who simply give their specs to a vendor and farm out the production would have wound up with an inventory of defective products. I doubt if they would have shut down and given up the revenue to fix the problem at the front end. More likely, they would have opted to let their customer service group fix it at the customer site.

Q. Does this approach make us unique in our industry?

A. I believe it does, because we are seeing more and more of our competitors OEMing their production of computers.

Q. Is Compaq different in any other ways?

A. Another important difference is the tight linkage we have established between Design Engineering and Manufacturing. We created a forum last year called the Corporate Quality Council (CQC) made up of design engineers from Houston, Munich and the Asia/Pacific area, plus representatives from each of the manufacturing locations. Other members of this team are from Sales, Marketing and Customer Support.

This key group meets regularly to evaluate the implementation of our Manufacturing-to-Design strategy which addresses four key aspects of product design: manufacturability, testability, serviceability and reliability.

Q. How does this approach work on a day-to-day basis?

A. The CQC establishes evaluation targets for products, plots improvement curves and monitors development as a product moves through the design stage. Action teams are created as required to solve problems. Using the data collected from our various testing and evaluation processes, they work back through the design and supplier processes to fix problems before they ever reach the end user. In this way, we can ensure against decreasing the value of our products as we get into high volumes.

Q. Tell us about some of the other criteria on your list of eight objectives?

A. Item #3 gauges work-in-process yield. We check every subassembly at every production point, from the time the unit leaves the first assembly station until it is packed in the box and ready for shipment. These three measurements are reported on every day from every factory, so we can keep constant track of the quality we build into our products and benchmark internally our three manufacturing sites. Measurement #4 addresses Customer Service. It tells us how well we are responding to customer orders in terms of our predictability and flexibility.

We plan to significantly improve this measurement result in 1993.

Measurement #5 and #6 address cost issues; #7 and #8 deal with cycle times.

Q. How do you ensure our people meet these criteria?

A. By first making sure that each employee understands how important he or she is. If our company is to continue to be successful, every employee needs to buy in fully to Compaq's commitment to total quality, which began with our very first production in 1983. Since then, we have taken great care to perpetuate this commitment throughout our worldwide organization by implementing several innovative programs:

Every employee still goes through our Total Quality Commitment program (TQC), which is a version of Demming's famous TQM principle written specifically for Compaq.

Since 1987 we have used a high-performance workteam concept which provides a measurable process that promotes cooperation and teamwork and eliminates the kind of counter-productive rivalries that can produce waste and inefficiency through dis-connects or duplicated efforts.

Q. Has there been any outside recognition of our quality efforts?

A. We believe that Compaq is the first CPU manufacturer to receive corporate-wide certification from the International Standards Organization (ISO), signifying that each of our manufacturing facilities meets accepted international standards for quality management systems and quality assurance. Also, this quarter we won the Spirit of Texas award for quality recognized by the Texas Department of Commerce.

Q. Are there any such certification processes for individual employees?

A. We have instituted a Skill-Based Certification program (SBC) which certifies an employee in at least one operation. Ultimately, we hope to have every employee certified in every operation. This degree of certification would mean financial benefit to the employees, and having people skilled in multiple jobs would reduce our overall cost of operation. They could also assist in training new employees.

Q. Has production finally caught up with demand?

A. We've made good progress, but despite all our efforts in building products in record volumes, we still haven't quite caught up with demand. We still had a sizable backlog at the end of the fourth quarter, but we expect to be current by the end of the first quarter of 1993.

Q. What is your outlook for the future?

A. I expect demand to remain strong in the foreseeable future. As result, we are currently implementing a very ambitious 1993 build plan that calls for us to do more units in the first quarter of the year than we did for all of 1991. Long term, I am confident that we have all the ingredients for continued success: a sound strategy, technological leadership, cost controls, price and quality advantages, the reputation for being the best and, best of all, a skilled and enthusiastic workforce. Compaq has a significant opportunity at hand, and we will do what is necessary to take full advantage of it.

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Compaq author signs worldwide publishing contract

Compaq Australia's Communications Program Manager, Jonar C. Nader, recently launched his 550-page book, *Prentice Hall's Illustrated Dictionary of Computing*. The book has been hailed as the "best of its type" and is selling in the United States, Canada, the United Kingdom, South East Asia, India, New Zealand, and Australia – with translation rights being negotiated.

With the assistance of Compaq and over 95 other companies from around the world, Jonar's dictionary contains over 3,800 entries, including terms used by the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) – being the first book of its kind to do so. Entries include abbreviations, contractions, acronyms, origins and pronunciations.

In his book, Jonar describes what each term means and explores historical aspects of computing and future directions in technology – providing a complete perspective to make the terminology even easier to understand.

A Compaq employee since 1989, Jonar joined Compaq Australia as Salespaq Program Manager. He later joined the distribution team, and now works in the Marketing Communications Division.

Jonar is a working member on the Information Technology Sub-committee for the Standards Association, writing standards for software development and system documentation. He is a member of the Computer Society; the Society of Authors; the International Federation of Journalists; the Journalist's Association; and a co-founder of the Information Technology Society.

Inside & Out caught up with Jonar and posed the following questions to him:

I&O: Why did you decide to write this dictionary?

Jonar: I have always been one for systems and standards. Not to the point where

they stifle progress and imagination, but to the point where they assist in streamlining a process. Several years ago, when I was heavily involved in the publication of technical material, I found it difficult to reach consensus about technical issues. Even experts and standard bodies all over the world contradicted each other on certain issues. I decided to carry out my own investigations with a view to publishing something accurate and authoritative.

I&O: Isn't the industry already riddled with dozens of dictionaries?

Jonar: Libraries and bookstores are full of various publications that try to broach the subject of computer terminology, but they do not adhere to standards. For example, if one were to consult 13 dictionaries (as I did) for the correct way to abbreviate "megabyte," it would not be surprising to come across 13 different answers.

I&O: So how does your dictionary differ from those that have gone before it?

Jonar: My dictionary is the first and only book to recognize the need for international standards, and to work closely with the United Nation's International Organization for standardization (ISO) by including official terms defined by ISO and the International Electrotechnical Commission (IEC). My dictionary is also the first and only book of its kind to incorporate a Style Manual for correct usage of computer terminology.

I&O: Such a publishing project must have taken you years to complete. How did you go about it?

Jonar: The book took four years to complete, averaging 30 hours per week. The trick was to combine careful planning, a sense of focus and serious dedication. Many of my friends could not understand how someone as active as I could find the time to write a book. I listen to educational tapes in the car, and I do not watch television, so precious time does not escape me. Each week, the average Australian watches in excess of 25 hours of television, and spends an additional 18 hours listening to the radio. Despite all this, ample leisure time is still available. For me, writing was no different to playing tennis or frequenting cinemas. I enjoyed every minute of the challenge.

I&O: As a journalist and an author you've been widely published. What's your next big project?

Jonar: I have so many ideas. However, my next project is the development of a book about management. Although this sector of the market is even more crowded than the technology textbook market, again I have crystallized an idea which will enable me to launch a book like no other on the market. And following that, I will write a movie screenplay. Although comedy is my favorite, I think I will settle for a suspenseful movie. In fact, I have already drafted the "treatment" (as it is referred to in the motion picture world).

*I&O:* How does your work at Compaq fit in to your activities?

Jonar: I am often asked this question. It is important to realize that I have been a technology freak since the age of 15 when

I started serious programming. I have been involved in the field of computing and technology for 13 years. The fact that I am an author and lecturer and I sit on official national standards committees expands my skills, enhances my talents and strengthens my contacts. My work at Compaq is a vital part of my career. I would imagine that thousands of Compaq employees have incredible talent. Whether it be playing tennis, completing post graduate studies or playing music, each one of them takes their work at Compaq very seriously. I take my hobbies seriously and, unlike a tennis match, my hobby can be duplicated in the form of a book. I am very lucky that my management team at Compaq has been behind me all the way. It's been a bonus to work at Compaq where the corporate culture supports personal development.

I&O: You say you enjoy technology, yet you work in marketing. How do you derive satisfaction out of that?

Jonar: I love the function of marketing because it is as exciting as the technology itself. I have been blessed with the capacity to function as a professional marketer in an industry I thoroughly enjoy. People who try to market a product or service which they do not understand are in the same boat as those who know everything about a product or service, yet know very little about their market – both are doomed for failure.

I&O: In Jonar's book, the last paragraph of his preface urges us to consider standards. It reads, "There will come a time when 'public computers' will become as common as 'public telephones'; and when '3D' will replace your 'TV'; and when silicon chips will seem as archaic as vacuum tubes. There will also come a time when computers, as we know them, will cease to exist. Until then, however, this book is about standards and accuracy, and these either evolve haphazardly or are defined by design … which shall it be?"
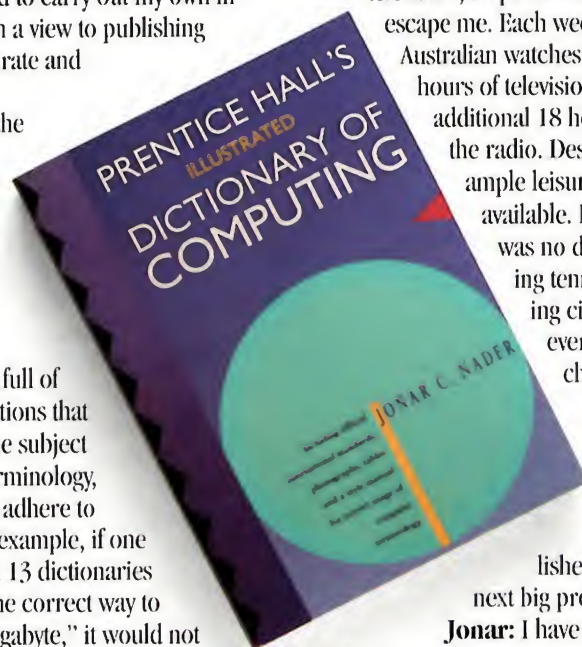
Compaq Australia lends helping hand to Red Cross

Thanks to Compaq Computer Australia, the Australian Red Cross Society's Tracing Agency has the most sophisticated computer system in the world.

Compaq Australia, along with Arthur Andersen, has been working with the Australian Red Cross to update the National Tracing Agency's operations since 1991. Compaq is helping the Red Cross as part of its corporate sponsorship program by providing hardware for a new network, with Arthur Andersen as the system integrator.

The Tracing Agency of the Australian Red Cross is part of an international network linked with the Central Tracing Agency (CTA) in Geneva. The CTA registers, centralizes and transmits information about prisoners of war and civilian internees. Political detainees, displaced persons, refugees, people in need of protection and those separated from their relatives are also beneficiaries of CTA assistance.

When the Australian Red Cross receives a letter for a new case, a database index record will be created. Correspondence will be scanned into the case file, with outgoing correspondence generated by the word processor and a copy transferred electronically

to the case file. Incoming correspondence will be scanned into the case file. A case file could include scanned copies of photographs, certificates or handwritten notes.

All of this will be done on hardware donated by Compaq. The new network includes:
• Four COMPAQ DESKPRO 486/33 PCs as workstations.
• One COMPAQ DESKPRO 486/33 PC as a file server.
• One 486 model of the COMPAQ SYSTEMPRO/LT as a workstation.
• One COMPAQ DESKPRO 386sx/20 optical server.

The Novell-based network runs a Marvin imaging, database and optical storage system; Calera Wordscan Plus to convert to text from images; an Intel Satisfaxion fax card, Microsoft DOS 5 and Windows 3.0; WordPerfect for Windows; UPS Powerchute and Sytos tape backup.

Finding lost loved ones

One of the most critical functions of the new system is the search function. Last year, the Australian arm of the Tracing Agency handled about 3,500 requests – mainly using a manual index card system – from people

seeking information about missing relatives.

The new computerized system will allow the Red Cross to access information that they could not have in the past. Now, if the Red Cross received a letter from the Turkish Tracing Agency searching for someone who arrived in Australia on a particular plane, the Australian Red Cross could call up all references to the plane. Armed with information on the missing person's date and

place of birth, the Red Cross would attempt to trace the person's whereabouts in Australia. Any relevant information is then merged with a word processing document and sent directly to the fax machine from the COMPAQ workstation within the hour.

All standard documents (inquiry forms, index cards, etc.) are now "on-screen" forms, accessible from each terminal and can be printed.

Peter Steele, Honorary Treasurer, Australian Red Cross, presents a commemorative plaque to Ian Penman, Managing Director, Compaq Australia and New Zealand, for the company's donations to the charitable organization.

Inventors honored at 100th patent celebration

Paul Culley, a prolific Compaq inventor, enjoys the celebration honoring the contributions of all Compaq inventors.

Compaq Aug. 11. The inventors were Maria Mello and Karl Walker. Their invention is entitled "Password Protected Enhancement Configuration Register for Addressing an Increased Number of Adapter Circuit Boards with Target Machine Emulation Capabilities." The two inventors were honored by Eckhard Pfeiffer, CEO, during the celebration.

Paul Culley, a Compaq engineer, was also honored by Pfeiffer for his contributions to the company.

"Paul is our most polific inventor," says Strong. "He is named inventor on 17 different Compaq patents." Culley was the inventor on the first electrical patent awarded to the company – "PC Having Normal and High Speed Execution Modes." This patent was issued in 1984. Ted Papajohn, designer of the first COMPAQ product, was awarded the first design patent owned by the company.

The patents already granted as well as the 219 patent applications the company has pending are proof that Compaq employs an exceptionally talented and gifted group of engineers and designers.

Compaq inventors were honored last month with a party celebrating the milestone of the 100th patent awarded to the company by the United States Patent and Trademark Office.

The company now has been granted 128 U.S. patents and 41 patents are scheduled to issue in the near future. Patents have been granted to Compaq for various technological advances including bus architecture, processor hibernation and memory management processes, just to name a few.

As commercially important inventions are made by Compaq employees, the company applies for patents around the world.

"A large patent portfolio is one of our most important assets," explains Diane Strong, Legal Assistant in the Intellectual Property area of the Legal Department. "It gives us more credibility with our first-tier competitors and enables us to compete with the third-tier manufacturers who spend little or nothing for research and development. Clone-makers who simply copy our designs can be stopped altogether or forced to pay royalties if they infringe our patents."

The 100th patent was awarded to

Maria Mello and Karl Walker are presented a replica of the patent for their invention by Eckhard Pfeiffer, CEO.

Compaq establishes training center in China

Compaq has established a $1 million computer training center at Tsinghua University in Beijing, China. The center, the company's first major investment in China, was officially opened in a Nov. 20 ceremony.

The training center is the result of an agreement between Compaq Computer Hong Kong Ltd., Tsinghua University and two Compaq distributors in China – Eekon Computer Systems China and

ComputerLand China. It will be used primarily by each partner to provide computer related training. Courses on hardware architecture, operating systems, networking, and computer applications and appreciation will be offered to people from government, institutions, companies and the general public. Each of the four partners have made significant contributions toward the development of the center. Tsinghua University, ranked as one of

the top learning institutions in China, provided the facilities and the staff. Compaq provided $750,000 worth of hardware, software and training materials, as well as training to the center staff.

Under the agreement, all donated COMPAQ hardware and software will belong to the university at the end of three years. Eekon Computer Systems and ComputerLand China contributed a total of $300,000 for renovations, furnishings,

hardware, software and networking options.

"China is a key geographic market for Compaq. Our participation in the development of the training center reinforces our commitment to global customer satisfaction," Eckhard Pfeiffer, CEO, said during the opening ceremony. In 1991, Compaq was among the top three PC suppliers in the Chinese market, and 1992 sales have been strong.

PC network helps Ritz carry on tradition of exceptional service

Since its founding by César Ritz in 1898, the Ritz hotel of Paris has set the standard for elegance, cuisine and service among world-class hotels.

Its legendary guest list – Ernest Hemingway, F. Scott Fitzgerald, Coco Chanel and the Duke and Duchess of Windsor – grows by the day as heads of state, royalty, top corporate officers, and Hollywood stars from Schwarzenegger to Madonna make their way to 15 Place Vendôme in the heart of Paris.

How does the hotel maintain such enormous appeal? "By providing guests with impeccable service in a setting of unique, yet comfortable refinement," says Ritz President Frank J. Klein. "The needs of our guests are of paramount importance to our staff."

To maintain the environment for such excellence, the Ritz has been updated to keep in step with modern times. In 1979, Mohamed Al Fayed, the Egyptian owner of Harrods of London, purchased it for $30 million and, over the next decade, invested $150 million in an extensive renovation program. Besides a refurbished decor, new facilities were added underneath the hotel: a state-of-the-art health club with the most beautiful pool in Paris; a spectacular private night club and a first-class cooking school, L'École de Gastronomie Française Ritz-Escoffier.

To better serve guests and improve overall operations, one more element was added very subtly to the hotel's rich furnishings: a powerful, COMPAQ-based PC network.

A Better Way to Compute

Planning for a PC network did not begin until after the hotel was in mint condition in 1989. A management committee team, led by Eric Massot, Director of Finance and Administration, and Bernard Colson, Director of Information Systems, decided the time had come to replace the hotel's software and aging minicomputer, a Digital PDP1144 with 20 terminals.

"We wanted software that would increase our guest services as well as strengthen the business side of our operations, especially sales and marketing," says Colson. "For hardware, we needed a fast, reliable system that would work 24 hours a day, 7 days a week."

The team briefly considered another minicomputer solution, but rejected the idea when it became apparent that a PC network would be more flexible, easier to use and less expensive.

After a year of investigation, the Ritz chose to use PC-based software programs from Fidelio Software GmbH of Munich, Germany. The programs can handle and sharpen almost every aspect of a hotel's guest services, sales and management, and day-to-day operations. Fidelio has installed its programs and trained staffs in over 1,200 hotels worldwide with excellent results.

For computer hardware, the Ritz selected products from Compaq – a network of 34 COMPAQ DESKPRO 386N PCs tied to a 386-based COMPAQ SYSTEMPRO file server, running Novell NetWare operating system software.

Could the hotel have used a clone? "No," says Colson, "it was a matter of

image." COMPAQ products were picked, he explains, because of their quality, speed and durability. Another deciding factor: security features on the PCs that permit selective access to information.

Improving Services

From the day its doors opened, service has been the hallmark of the Ritz. The hotel today maintains a staff of 500 people to serve guests in 187 rooms and suites – one of the highest ratios in the world. Rooms cost from $400 to $600 a night; prestige suites from $6,000 to $10,000 a night.

Upon request, the Ritz will take charge of a guest's luggage the moment it arrives at the airport. A staff member will see it through customs, transport it to the guest's room, and unpack and press the clothing. When the guest arrives, he or she can feel immediately at home.

The Ritz is using COMPAQ PCs with Fidelio's Front Office and Reservations Management program to provide expanded services to its guests. Here are a few of the ways the system helps:

• **Prompt reservations:** At the Ritz, no two rooms are alike, whether in furnishings, view or facilities. The new system allows reservation personnel to quickly find the best room for the guest, whether they want the Ernest Hemingway suite or the Coco Chanel suite, a view of the Ritz gardens or the Eiffel Tower.

In many ways, the Ritz is like an exclusive club. People come back again and again. One of the unique features of the reservation system is its capability to track guest histories – maintaining about 60,000 of them. The staff, as a result, knows the likes and dislikes of returning guests. What room they prefer to stay in,

for example. Or whether they like hard beds or soft ones – with or without down comforters. The histories also tell what dining tables the guests prefer and, naturally, the names of their dogs and how many times a day they need to be walked. The staff is prepped with all these details before the regulars walk through the front door.

• **Comprehensive posting and flexible check out:** Guests at the Ritz stay much longer than guests at other hotels – about a week on average. As a result, they amass huge postings. The Ritz must account for every meal taken, every glass of champagne downed, and every stamp purchased from the concierge. Some fifteen systems – from cash registers in restaurants, to room telephones, to a COMPAQ PC at the concierge's desk – interface with the posting system. Every charge is immediately posted and can be reviewed on a real-time basis.

At check out, the PC system can print the bill out in five different languages – French, English, Spanish, Italian or German. If guests need their bills handled in special ways for business or personal reasons, the Fidelio package can rearrange postings immediately and print out as many as four separate bills.

Boosting Sales and Marketing

Although the Ritz caters to the rich, its management knows that it doesn't make good business sense to be too exclusive. "I try to make people understand that we are not inaccessible," says Veronique Marcé, Director of Sales and Marketing. "We have perfect facilities for board meetings and product launches. We cater to almost every type of business clientele."

The rates at the Ritz, she points out, are comparable to those of other leading Parisian hotels. "With our grand style and new facilities, we simply have much more to offer," she asserts.

The COMPAQ PCs with Fidelio software help the sales and marketing efforts of the Ritz in several ways:

• **Analyzing past and current business trends.** Managers can have their PCs access accounting and reservation databases and generate up to 200 separate statistical reports on topics such as posting and occupancy trends for the previous day, month to date or the year to date. They can also review forecasts on future occupancy levels, and plan

accordingly.

• **Tracking potential customers.** The Ritz has a staff of 6 people in sales who contact companies and travel agencies for future bookings. Using COMPAQ PCs, they record key details on prospects (addresses, interest levels, industry categories, etc.) and follow up with letters and personal contacts. The Fidelio software allows Ritz managers to ascertain the costs of attracting new clientele and to determine the productivity of each sales representative.

A Solid Performance

The COMPAQ-based PC network has been on the job for over a year and the Ritz is happy with the results. Ten of the PCs are used at the front desk, five in the reservations department, and two in the systems information department. The rest of the COMPAQ units are scattered throughout the hotel, including the laundry and housekeeping departments.

Training the staff to use the system took about 8 hours per person. This was somewhat longer than the training time for similar installations at other hotels, but the Ritz wanted to make sure that its staff had a complete understanding of how the system could help improve guest services as well as business.

One of the best features of the PC network is that technical problems have been rare. Service from the hotel's local Authorized COMPAQ Reseller has been extremely prompt.

"The best machine," says Colson, "is the machine that you don't ever hear about because it's working so well all the time."

"Even if we have the greatest problems," he points out, "our guests should not feel it. In a hotel such as the Ritz, we have to keep smiling all the time."

Come rain or shine, a doorman at the Ritz stands ready to welcome and assist guests. A new PC network in the hotel has expanded guest services and strengthened the famed hotel's business operations.

A front desk receptionist, with a COMPAQ PC at his fingertips, responds quickly to guest needs. World travelers seek the Ritz for its impeccable service and refined accommodations.

COMPAQ